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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,720	11/14/2003	Michael A. Rothman	42P17974	2067

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Cory G. Claassen
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

EXAMINER	
RAHMAN, FAHMIDA	

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,720	ROTHMAN ET AL.	
	Examiner	Art Unit	
	Fahmida Rahman	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are pending.

Specification

The disclosure is objected to because of the following informalities:

"my" in line 9 of [0023] of page 9 should be changed to "many".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-5, 8-9, 11-13, 15-17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Dickerson et al (US Patent Application Publication 20030212897).

For claim 1, Dickerson et al teach the following limitations:

A method, comprising: executing a pre-boot application ("firmware" mentioned in line 1 of [0028] of page 2) within an emulated pre-boot environment (10) to test functionality of the pre-boot application (lines 1-2 of [0028] of page 2), the emulated pre-boot

environment executing within a user mode of a processor ([0040]) of a processing system during an operating system ("OS") runtime of the processing system ("user mode" and ""supervisor mode" (or "kernel mode") are provided by OS to processor. Thus, the firmware testing is in OS runtime of the processing system of Fig 1B);
and interacting with a hardware device (44) of the processing system (Fig 1B) in response to the executing of the pre-boot application ([0032] of page 3) via a kernel proxy agent (46 is the kernel proxy agent, since it enables 44, which is only enabled in kernel mode) executing in a kernel mode of the processor (supervisor mode is the kernel mode. To access 44, processor 40 should be in kernel mode of operation. Kernel proxy agent 46 recognizes the mode change of processor, toggles control signal 50 and enables 44).

For claim 3, interface translator is the element that changes the mode of the processor from user mode to kernel or supervisor mode. OS passes the request for hardware interaction from firmware to the OS API if API is available (for example, accessing user mode memory). If OS API is not available (for example, when accessing supervisor mode memory), interface translator changes the mode from user to kernel to access the supervisor mode components.

For claim 4, OS informs processor 40 to change mode from user mode to kernel mode, which is analogous to publish an interface to the user mode of the processor by kernel

agent 40. This enables OS to pass the request for hardware interaction to kernel proxy agent 40.

For claim 5, kernel mode has to reserve memory controller to be used by the supervisor memory.

For claim 8, to access 44 in a pre-boot environment, a memory controller (i.e., the memory driver) needs to be accessed first.

For claim 9, Dickerson et al teach the following limitations:

A machine accessible medium that provides instructions that, if executed by a machine, will cause the machine to perform operations, comprising:

executing a pre-boot application ("firmware" mentioned in line 1 of [0028] of page 2) within an emulated pre-boot environment (10) to test functionality of the pre-boot application (lines 1-2 of [0028] of page 2), the emulated pre-boot environment executing within a user mode of a processor ([0040]) of a processing system during an operating system ("OS") runtime of the processing system ("user mode" and ""supervisor mode" (or "kernel mode") are provided by OS to processor. Thus, the firmware testing is in OS runtime of the processing system of Fig 1B);

and interacting with a hardware device (44) of the processing system (Fig 1B) in response to the executing of the pre-boot application ([0032] of page 3) via a kernel proxy agent (46 is the kernel proxy agent, since it enables 44, which is only enabled in

kernel mode) executing in a kernel mode of the processor (supervisor mode is the kernel mode. To access 44, processor 40 should be in kernel mode of operation. Kernel proxy agent 46 recognizes the mode change of processor, toggles control signal 50 and enables 44).

For claim 11, interface translator is the element that changes the mode of the processor from user mode to kernel or supervisor mode, which is the running OS. OS passes the request for hardware interaction from firmware to the OS API if API is available (for example, accessing user mode memory). If OS API is not available (for example, when accessing supervisor mode memory), it changes the mode from user to kernel to access the supervisor mode components.

For claim 12, OS informs processor 40 to change mode from user mode to kernel mode, which is analogous to publish an interface to the user mode of the processor by kernel agent 40. This enables OS to pass the request for hardware interaction to kernel proxy agent 40.

For claim 13, kernel mode has to reserve memory controller to be used by the supervisor memory.

For claim 15, 40 can be in kernel mode as soon as OS loads kernel, i.e., initial phase of the OS.

For claim 16, Dickerson et al teach the following limitations:

A processing system (Fig 1B), comprising: a processor (40) to execute an operating system ("OS") ("user mode" and ""supervisor mode" (or "kernel mode") are provided by OS to processor. Thus, the firmware testing is in OS runtime of the processing system of Fig 1B) and to execute a pre-boot application ("firmware" mentioned in line 1 of [0028] of page 2), the processor having a user mode and a kernel mode (Fig 3B); a hardware device (44) communicatively coupled to the processor; and a data storage unit (combination of ROM storing the firmware and 46) communicatively coupled to the processor and having stored thereon a pre-boot environment module (firmware is stored in ROM) and a kernel proxy agent (46 has associated logic stored that can recognize the kernel mode of the processor and enables access to 44), the pre-boot environment module to be executed by the processor to generate an emulated pre-boot environment within the user mode for executing the pre-boot application (ICE provides an emulated pre-boot environment), the kernel proxy agent to be executed by the processor to enable interaction between the pre-boot application and the hardware device (46 enables ICE to interact with 44) when the OS does not include an OS user mode application programming interface ("API") for interacting with the hardware device (user mode can't access 44).

For claim 17, kernel mode has to reserve memory controller to be used by the supervisor memory.

For claim 19, interface translator is the element that changes the mode of the processor from user mode to kernel or supervisor mode, which is the running OS. OS passes the request for hardware interaction from firmware to the OS API if API is available (for example, accessing user mode memory). If OS API is not available (for example, when accessing supervisor mode memory), it changes the mode from user to kernel to access the supervisor mode components.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 7, 10, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickerson et al (US Patent Application Publication 20030212897).

For claims 2, 10 and 20, Dickerson does not explicitly mention about the reporting of error occurred during the interaction with the hardware device. Examiner takes an official notice that reporting error is well known in the art. One ordinary skill in the art would be motivated to have an error reporting when interacting with hardware, since ICE is a debug tool for the firmware. If there is any error occurred in accessing the

supervisor memory, such error reporting would help the user to take further proper action.

For claim 7, Dickerson does not explicitly mention about copying the firmware to the option ROM after the functionality is determined to be correct.

However, the system of Dickerson tests and develops the firmware, which means that the firmware would be saved to ROM when there would not be any error.

Claims 6, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickerson et al (US Patent Application Publication 20030212897), in view of McKenna et al (US Patent Application Publication 2001/0018721)

For claim 6, Dickerson does not teach that hardware device is PCI add-in card and hardware resource includes a PCI slot for coupling the PCI add-in card.

The supervisor memory can be placed in a PCI add-in card and memory controller can be placed on a north bridge chip. In such a case, the hardware resource would be north bridge chip comprising a PCI slot to connect the PCI add-in card.

McKenna et al teach a system having such arrangement (Fig 1).

It would have been obvious for an ordinary skill in the art at the time the invention was made to combine the teachings of Dickerson and McKenna et al. One ordinary skill in the art would be motivated to have such arrangement of hardware device, since add-in card can be replaced and added into a system very easily.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman
Examiner
Art Unit 2116

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THUAN N. DU
PRIMARY EXAMINER